

## REMARKS

Applicant thanks the Examiner for her careful and meticulous review of the application transmitted in the Office Action mailed March 29, 2004.

By this amendment applicant presents for formal entry the aforementioned replacement paragraphs and a replacement abstract satisfying the formal requirements

Claims 1-5 are pending in application.

Applicant respectfully responds to the points raised by the Examiner by mentioning each point by its paragraph number in the Office Action.

### Paragraph 2 INFORMATION DISCLOSURE STATEMENT

Applicant acknowledges that mere citation of a reference in the body of the specification is not the equivalent of a formal Information Disclosure Statement ("IDS"). Accordingly, Applicant submits herewith a copy of electronic IDSs citing a total of five (5) U.S. patents and two (2) U.S. published applications. Applicant respectfully requests that the references cited therein be reviewed for patentability against the instant application, and be noted as such on form 1449/PTO. Applicant encloses herewith a true and correct copy of the ePave Acknowledgment Receipt, including acknowledgment that the prescribed fee of \$180.00 for an Information Disclosure Statement after a first Office Action (fee code 1806) was transmitted with the electronic filing.

Since the capabilities of the ePave system do not permit the transmission of nonpatent literature, applicant submits herewith a Supplemental Information Disclosure Statement, listing two (2) nonpatent references. The electronic and paper-filed transmissions together comprise one complete Information Disclosure Statement; therefore, applicant has not transmitted a second payment of the stipulated fee of \$180.00. If this belief is not correct, authorization to charge deposit account 05-0845 has been given on the enclosed Fee Transmittal Sheet.

### Paragraphs 3-4 ABSTRACT

Applicant replaces the Abstract section, beginning at page 64, line 3, with alternative, shorter text as follows:

The centerpiece of this invention is clusters. Clusters include taste signatures, which represent the tastes of a cluster. Users are enabled to find clusters that match their tastes, and artists are enabled to find the clusters where the users are who are likely to be interested in their work. Clusters thus serve as hubs of activity for particular tastes; in most embodiments ratings of items of interest to those tastes can be viewed, and various embodiments may include various means for inter-user communication so that communities of people with similar tastes are formed.

This responds to the examiner's objection to the length of the original abstract. The new abstract is based, for example, on material beginning page 13, line 8, and subsequent text.

**Paragraph 5**  
**SUGGESTION TO REARRANGE SPECIFICATION**

Applicant acknowledges the Examiner's recommendation to rearrange the specification, but respectfully traverses this suggestion. Applicant believes that such reformatting is discretionary and that the application as filed satisfies USPTO formatting requirements as of the filing date of November 16, 2000.

However, Applicant takes this opportunity to make amendments to the specification which do not add objectionable new matter but improve its self-consistency and correct typographic errors.

We replace the paragraph beginning on page 2, line 8, with the following:

The centerpiece of this invention is ~~clusters of users who have similar tastes~~. Clusters include taste signatures, which represent the tastes of a cluster. Users are enabled to find ~~elaster clusters~~ that match their tastes, and artists are enabled to find the clusters where the users are who are likely to be interested in their work. Clusters thus serve as hubs of activity for particular tastes; in most embodiments ratings of items of interest to those tastes can be viewed, and various embodiments may include various means for inter-user communication so that communities of people with similar tastes are formed.

The first strikeout is to correct an error that occurred when this introductory text was created at a different time and later than the substantive portions of the specification.

The main body of the specification makes it clear that clusters as the term is used in the specification are not simply clusters of users, as would be the literal interpretation of the paragraph as originally given. Rather, our clusters are data structures incorporating such elements as taste signatures (which may be composed of a list of items or works, for example) and may have associated features such as discussion groups. Clusters do not have users as members in all embodiments (see page 17, line 2, which indicates that only "preferred" embodiments enable users to become members).

So, the first strikeout eliminates an erroneous description of clusters. The inserted text that follows gives a better (though not detailed) pointer to the key aspect of clusters in the invention.

The third insertion replaces a singular word with a plural word to fix the grammar.

The fourth (and final) insertion in the paragraph indicates that the interpersonal means are not included in every embodiment (see page 17, line 2).

We amend the specification by inserting the following three paragraphs, to be inserted consecutively at page 2, line 17:

It should be noted that the body of the specification makes clear that the term "cluster" is used in two distinct ways in this patent application. In the first use, it is an abstract concept which might be called a

"taste-identification cluster." It is a data structure which represents certain tastes. It contains a "taste signature." It can be created by human beings or automatically by a software process. If a human being creates it, it will have an associated human "cluster initiator." It may have human "members" which "join" it. The taste signature may contain "items" or "works" which are entities such as songs that are of interest to humans.

The second use is the more traditional; for instance we cluster items together.

The usage will be clear from context.

We replace the paragraph beginning page 13, line 24 as follows:

When a users user wants to make use of the system, he usually does so by finding clusters of taste similar to theirs and, in preferred embodiments, with other positive characteristics.

That change corrects a grammatical error.

We replace the paragraph beginning page 24 line 15 as follows:

~~Preferred~~ In preferred embodiments, information is not given to the artist that will enable him to choose reviewers who only review highly. For instance, a preferred embodiment only enables artists access to each reviewer's reliability data and cluster membership. Artists will then be motivated to pick reliable reviewers, as compared to reviewers who often disagree with the majority, but they will not have a means to predict reviewers who only rate highly. Of course, in such an embodiment, an identifier for a reviewer that would enable the artist to associate him or her with particular displayed reviews would not be made available.

This is for reasons of readability and grammatical correctness.

Also, there should be a blank line at page 24 line 15 indicating the break between paragraphs.

## AMENDMENTS TO THE CLAIMS

Applicant amends claim 1 as follows:

A system comprising clusters of works ordered so that the works in a given cluster are selected to be ~~consistent~~ consistent with a particular set of human tastes, such system comprising:

An input mechanism wherein data is collected for use in optimizing said clusters;

A software mechanism for determining whether a particular possible change in the clustering would result in an improvement to the clustering;

Input facilities for possible changes to be suggested;

Facilities for implementing accepted changes;

A display mechanism whereby users may observe the ~~cluster membership~~ works comprising said clusters.

The change conforms the claim language to the language of the disclosure. It is not for a reason of patentability. In the specification, the term "cluster membership" refers to human

membership in taste-identification clusters. But claim 1 is about clustering works. In traditional language the term "cluster membership" as originally used in the claim would be acceptable, but is amended hereby to conform to the language of the specification which uses that term a different way.

#### **Paragraphs 6-7**

### **SECTION 102 REJECTION OVER SHARDANAND REFERENCE**

This discussion will refer to the cited article by Shardanand entitled "Social Information Filtering for Music Recommendation" as "Shardanand".

As per claim 1:

Firstly, it should be noted that the term "cluster" as used in claim 1 is fundamentally different in nature from the entities being optimized by Ringo in the references pointed to by the Examiner.

Claim 1 recites a selection of items, which is not necessarily a proper partition in the mathematical sense of the word "partition". That is, the invention provides for clustering items to form a selection of the entire set of items (or some very substantial subset).

The "changes" referred to in the claim are changes whereby an item is moved from one cluster to another, and it is determined whether that change results in an "improvement in the clustering", i.e. a better partition. For instance, in some embodiments the concept of information transfer is used to make that determination. (See for example page 11, line 19.)

Thus the changes referred to in the claim are fundamentally different from Ringo's facilities for adding artists or albums into the database as described in Shardanand (page 31).

Also the facilities for observing works comprising clusters is fundamentally different from Shardanand (page 31). Shardanand describes a view of suggestions Ringo makes for one particular user and other data pertaining to that user. In contrast, in the specification, the inventor is not referring to anything that is particular to a given user, but rather viewing the current contents of clusters created in the course of partitioning the collection of works. This selection is not made for a particular user's benefit, but rather is made for the benefit of all users, and a particular cluster is made for the purpose of serving a number of users who have similar tastes.

As per claim 3:

The examiner points out that Shardanand also teaches input facilities for making the changes. However, as pointed out above, these changes are of a fundamentally different nature from those recited in the claim.

As per claim 4:

The examiner points out that Shardanand teaches machine-generated suggestions. However, these suggestions are of a fundamentally different nature from those recited in the claim.

As per claim 5:

The examiner points out that Shardanand teaches suggestions generated by remote machines. Again, these suggestions are of a fundamentally different nature f those recited in the claim.

**Paragraphs 8- 9**

**SECTION 103(a) REJECTION OVER SHARDANAND AND SHANNON**

As per claim 2:

The objection is that, given Shardanand, the additional limitation of using information transfer to determine whether a change is obvious in light of Shannon's 1948 paper.

As discussed above, the change recited in the claims is fundamentally different from the ones described in Shardanand.

Additionally, the Shannon reference (page 6, section 4) does not use information transfer. Shannon's external valuation, while based on information theory, uses a fundamentally different calculation than information transfer, also known as "mutual information".

That being said, Applicant calls to the examiner's attention that using information transfer in an embodiment of clustering is disclosed in the Tishby paper cited in the accompanying Information Disclosure Statement.

**Paragraph 10**

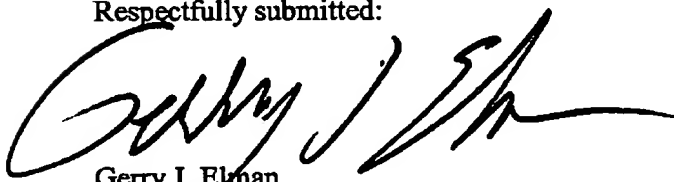
Applicant acknowledges the examiner's citation of additional prior art not applied to the present claims.

**CONCLUSION**

Applicant invites the examiner to review the references cited in the accompanying IDSs and to conclude that the claims as amended define patentable subject matter. Accordingly prompt notice of allowance is respectfully solicited. If any questions remain, the examiner is invited to phone Applicant's attorney.

Respectfully submitted:

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Gerry J. Elman  
Reg. 24,404  
Customer no. 003775

Phone: 610-892-9942  
efax: 925-226-4995  
email: gerry@elman.com